

HUMAN HEALTH

ENVIRONMENTAL HEALTH

PERFORMANCE
THAT WILL CHANGE
HOW YOU LOOK AT
ICP-OES



Optima 8x00 Series

ICP Optical Emission Spectrometers


PerkinElmer[®]
For the Better

BREAKTHROUGH PERFORMANCE FOR EVERY TYPE OF LABORATORY



ENVIRONMENTAL

Easy to use and engineered for exceptional throughput and detection limits, the Optima™ 8x00 series helps maximize productivity and profitability.

- Built-in environmental methods for quicker start-up
- Dual view capability allows measurement of high and low concentrations in the same run for enhanced productivity
- Torch cassette—low maintenance, simple operation
- eNeb™ delivers 2-4x detection limit improvement to more easily meet regulatory requirements

GEOCHEMICAL

Designed to deliver reproducible accuracy even with complex matrices, the Optima 8x00 series offers unsurpassed performance without compromising sample throughput.

- Flat Plate™ plasma technology lowers operating and maintenance costs
- WinLab32™ Multicomponent Spectral Fitting—superior interference correction for more accurate results
- Simultaneous data acquisition for maximum sample throughput



PHARMACEUTICAL/NUTRACEUTICAL

With the lowest detection limits of any ICP-OES and a full suite of enhanced data security features, the Optima 8x00 series makes it easy to comply with stringent regulatory requirements.

- Detection of full list of elements for transition to USP 232/233
- WinLab32 for ICP Enhanced Security™ for 21 CFR Part 11 compliance
- eNeb delivers 2-4x detection limit improvement to keep up with evolving regulatory requirements

FOOD/PRODUCT SAFETY

With a range of revolutionary technologies, the Optima 8x00 series offers unsurpassed flexibility for handling a variety of sample types and matrices.

- Flat Plate plasma technology improves robustness for many different matrices
- PlasmaCam™ aids in method development and productivity
- WinLab32 for ICP software designed to deliver rapid method development



INNOVATIVE TECHNOLOGIES FOR UNSURPASSED PERFORMANCE



With its groundbreaking features and expanded capabilities, the Optima 8x00 series is more than just an evolution of the world's most popular ICP-OES... it's a revolution.

Continuing PerkinElmer's long history of excellence and leadership in ICP technology, the Optima 8x00 series carries on a tradition of offering the best resolution and linear dynamic range. More significantly, the 8x00 series delivers a level of stability and detection limits never before seen in an ICP instrument.

Built around the proven design of the Optima platform and controlled with our industry-leading, Windows 7-compatible WinLab32 software, the 8x00 series will change the way you look at ICP-OES. The line's breakthrough performance is the result of a series of cutting-edge technologies that optimize sample introduction, enhance plasma stability, simplify method development, and dramatically reduce operating costs.

REVOLUTIONARY TECHNOLOGY—SPECTACULAR RESULTS

eNeb Sample Introduction

The most efficient and consistent sample introduction system available. By generating a constant flow of uniform droplets, the eNeb option enables Optima to deliver superior stability and unsurpassed detection limits—ideal for environmental and pharmaceutical labs.



Flat Plate Plasma Technology

A patented RF generator featuring maintenance-free plasma induction plates in place of the traditional helical load coil. With no cooling required and reduced argon consumption, operating costs are dramatically lowered.



PlasmaCam Viewing Camera

By offering continuous viewing of the plasma, this integrated color camera simplifies method development and enables remote diagnostic capabilities for maximum uptime. Ideal for high-throughput contract labs in food/product safety and geochemical.



MAXIMIZING PRODUCTIVITY WHILE MINIMIZING COSTS



Laboratories have very different definitions of what it means to get the most out of their ICP. But whether your priority is precision or reliability, flexibility or stability, speed or simplicity, you'll find the ideal solution in the Optima 8x00 series.

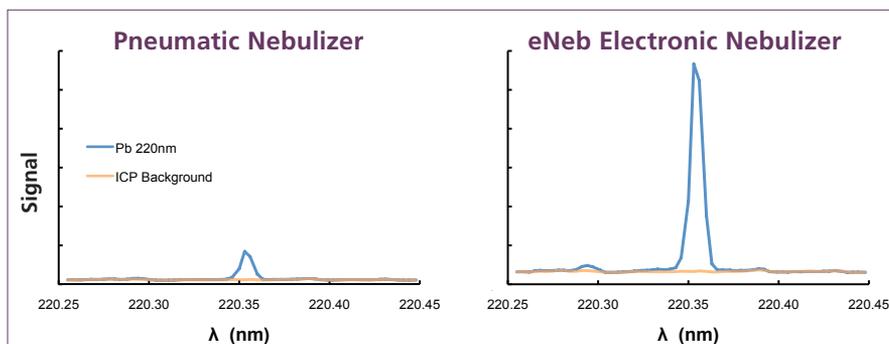
Reduced argon consumption with Flat Plate plasma technology

With PerkinElmer's patented Flat Plate plasma technology, the same robust, matrix-tolerant plasma is generated and maintained with almost half the argon consumption of helical load-coil systems. Maintenance-free, this whole new approach to RF generation minimizes operating costs without compromising performance. Flat Plate plasma technology is designed to run at 8 liters/minute plasma gas flow at any RF power, allowing for robust plasma conditions.

2-4x better detection limits with eNeb sample introduction system

With the revolutionary eNeb (electronic nebulizer) system, samples can be introduced into the Optima far more effectively and efficiently than ever before. Engineered around a precision-manufactured inert aerosol head, eNeb produces exceptionally consistent droplets no more than 6 microns in diameter. These small, uniform droplets can be dried, atomized and ionized more quickly and consistently for detection limits 2-4x better than those attainable with other sample introduction systems.

Ideal for all sample types—including those with high levels of dissolved solids—eNeb's aerosol head is manufactured from a rugged, long-lasting inert polymer, delivering exceptional matrix tolerance, acid resistance, and precision.

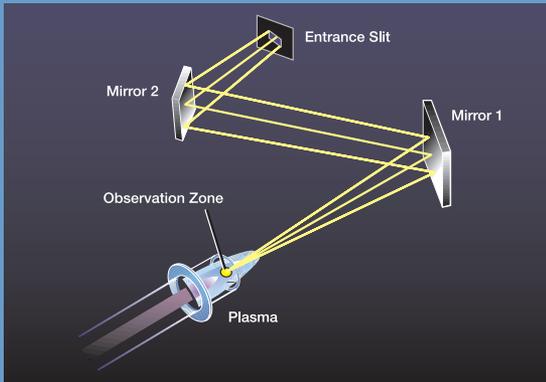


By producing small, uniform droplets without the use of a high-pressure gas stream, eNeb's analyte signals increase 2-4x more than the background for exceptional detection limits.

ENGINEERED TO DELIVER PROVEN PERFORMANCE

Advanced optical system ensures superior detection limits

Engineered for enhanced light throughput, the optical system on Optima instruments delivers superior detection limits, simplifying compliance with U.S. EPA, EN and DIN regulations. Unsurpassed stability and analytical accuracy are ensured through either Dynamic Wavelength Stabilization™ (model 8000) or a thermally stabilized optical system (model 8300).



Patented dual viewing of the plasma enhances productivity

Elements with high and low concentrations can be measured in the same run for superior throughput and efficiency. Axial viewing provides the lowest detection limits while radial viewing with variable viewing height permits extended working ranges and eliminates ionization effects.

Unique, shear gas system eliminates interferences

By removing the cool tail plume of the plasma, this innovative technology eliminates interferences. Since it uses air instead of expensive high extraction systems or cones that tend to clog and require cleaning, the system is maintenance-free, improves performance and enables a greater linear dynamic range. Removing the tail plume also minimizes the need to add expensive ionization suppressants.



Adjustable, quick-change torch cassette simplifies maintenance and optimizes performance

Simple to adjust (with no tools) even while the ICP is running, Optima's torch cassette makes it easy to optimize performance, even with the most difficult samples. For added flexibility, the instrument is compatible with a variety of nebulizers and spray chambers, including eNeb, Scott/Cross Flow and Cyclonic/Meinhard™ options.

Two high-performance SCD (Segmented-array Charge-coupled Device) detectors improve accuracy

Available on the Optima 8300, the detectors provide superior resolution and performance across the entire wavelength range (with one for UV, the other for Vis), reducing interferences and improving accuracy.

PUTTING TOGETHER THE PERFECT ICP SOLUTION

eNeb—Delivers the best signals, stability, and detection limits of any built-in sample introduction system available on an ICP-OES.

Flat Plate plasma technology—Generates a robust, maintenance-free, matrix-tolerant plasma using half the argon of traditional load-coil technologies.

Patented dual view—Offers radial and axial viewing of the plasma for effective measurement of elements with high and low concentrations in the same method.

Adjustable torch cassette—Makes it easy to optimize performance—even with the most difficult samples—and offers simple maintenance.



Shear gas system—Removes the cool tail plume of the plasma to eliminate interferences and minimizes the need for ionization suppressants. With no cones to clean or expensive high extraction systems, the use of shear gas is maintenance-free and optimizes performance in the axial view.



Select the model that best addresses the needs and priorities of your laboratory

	Optima 8000	Optima 8300
Maximum Throughput		X
Fastest Warm-Up	X	
Universal Data Acquisition		X
Time-Resolved Data Acquisition		X
Smallest Instrument Footprint	X	



WinLab32 for ICP software—Provides all the tools to analyze samples, report and archive data, and ensure regulatory compliance with an optional Enhanced Security package.

PlasmaCam—Enables continuous viewing of the plasma for simpler method development and remote diagnostic capabilities.

Two SCD detectors—Deliver superior resolution across the entire wavelength range, reducing interferences and improving accuracy, offering truly simultaneous data acquisition (Optima 8300).

Autosamplers—Optimize productivity with a choice of compatible models including the PerkinElmer S10 and a variety of other sample-introduction system options.

THE SOFTWARE TO SIMPLIFY YOUR WORKFLOW



To complement its many new hardware innovations, the Optima 8x00 series features an equally impressive array of software enhancements making it faster and easier than ever to go from sample to results.

The Windows 7-compatible industry-leading WinLab32 for ICP software simplifies every step of your workflow—before, during and post analysis.

Easy to set up and get started

Simple method development

Use the software's built-in methods for added speed and simplicity, or follow four easy steps to create your own. Either way, WinLab32 software makes method development effortless and ensures compliance even with today's most stringent regulatory standards.

Multicomponent Spectral Fitting (MSF)

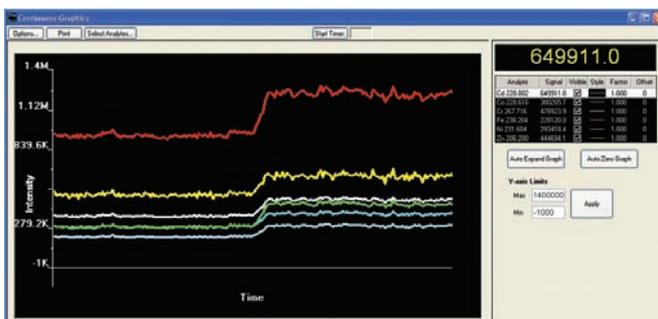
Particularly effective when running complex matrices, this patented approach to interference correction allows the analytical signal to be extracted from the measured spectra without interferences for improved analytical accuracy, precision and detection limits.

Time-resolved data acquisition

Expanded to collect multi-element data up to 60 minutes. This Optima 8300 feature is used to facilitate speciation, laser ablation and hydride generation analyses.

Continuous real-time graphics

By acquiring and displaying data in real-time, WinLab32 software allows you to adjust the operating parameters of the instrument and RF generator during a run to optimize your method. For example, RF power and nebulizer flow can be changed while their impact is monitored.



By displaying data in a continuous real-time graphics format, WinLab32 software makes it easier than ever to optimize instrument performance. In this example, signals can be seen to improve as the RF power is increased.

Enhance your productivity

QC functions in manual mode

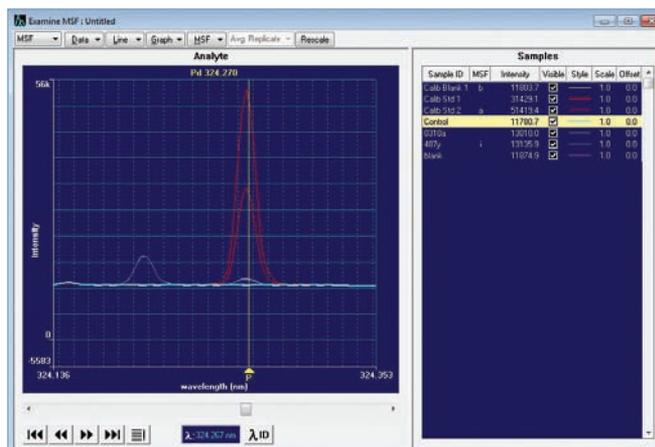
To simplify operation and ensure quality data, WinLab32 software allows you to take full advantage of QC functions without the need for an autosampler.

Adding methods during autosampler run

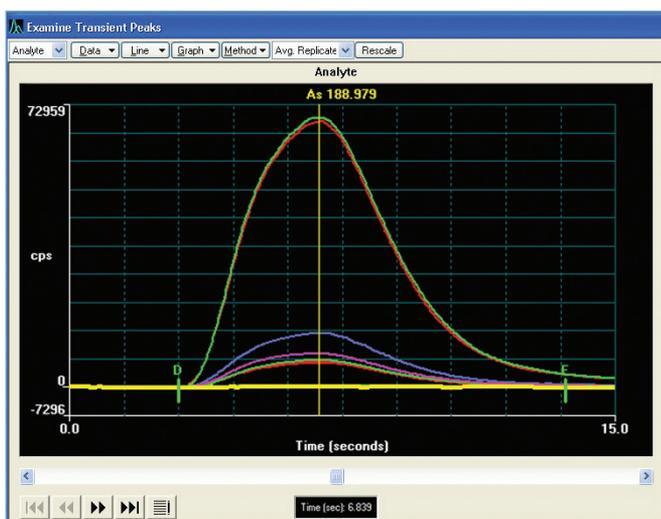
Simply click on the "Append Method" button in the software interface and you can dynamically add to your autosampler run lists even after an analysis has started.

Advanced SmartRinse™ feature

SmartRinse customizes and adjusts rinse times based on element concentrations in each sample. With the Optima 8x00 series, you now have Advanced SmartRinse capability that allows for automatic rinse-time optimization to improve productivity while preventing sample-to-sample contamination.



Multicomponent Spectral Fitting allows the analytical signal to be isolated from the measured spectra—without interferences—for superior accuracy, precision and detection limits.



Transient signal handling expands sample-introduction capabilities to include speciation and hydride analysis.

Get more out of your data

QC charting

Collect and maintain performance graphs over time by using this feature to quickly and easily prepare quality control charts from your data and store customized templates for future use. Results from QC samples, standards, blanks or any sample can be plotted, with limit ranges, means or expected values included on the chart. Results can even be formatted and exported for use with other applications.

Reprocessing

This useful tool allows you to optimize a measurement for a particular sample without having to re-run it. Potential adjustments include adding or changing background correction points, optimizing peak position, correcting data-entry errors and changing the calibration curve type. When reprocessing, the software never changes the original, raw data and clearly identifies the reprocessed data with a notation of what was done.

Universal Data Acquisition (UDA)

Running in UDA mode, WinLab32 gives you the flexibility to collect all the available spectral data for every sample regardless of the elements being determined. You can then retroactively determine the concentrations of elements not in the original method or at alternate wavelengths, avoiding re-runs and saving precious time and resources (Optima 8300).

CONSUMABLES AND ACCESSORIES THAT DELIVER EXCEPTIONAL PERFORMANCE AND VALUE



To further enhance the instrument's functionality, PerkinElmer offers a full array of accessories and consumables designed, tested and proven to achieve the best performance, productivity and reliability, while minimizing overall operating costs.

Autosamplers and Supplies

Compatible with virtually all sample introduction systems, our productivity-enhancing S10, CETAC and ESI autosamplers are fully integrated with our WinLab32 for ICP software. A wide variety of high-quality autosampler tubes and supplies are also available.



The S10 Autosampler can easily turn your Optima ICP-OES into a fully automated analytical workstation.

Sample Preparation

Multiwave™ 3000 microwave sample digestion system—Precise control with high-power heating and high-pressure capability along with built-in cooling reduces cycle time, improving productivity

PerkinElmer Sample Preparation Blocks (SPB)—Acid-resistant, Teflon®-coated blocks guarantee temperature uniformity for any digestion/heating method requiring a temperature below 180 °C

Flow Injection for Atomic Spectroscopy (FIAS) Systems

A fully automated system that simplifies and speeds up analyses required for complex sample preparation, such as mercury and hydride-forming elements

ICP Consumables and Supplies

Nebulizers/Spray Chambers—Revolutionary eNeb electronic nebulizer, Scott/Cross Flow and Cyclonic/Meinhard™ options



Injectors—full selection of alumina, quartz and sapphire injectors

Flat Plate Torches—PerkinElmer exclusive, one-piece, demountable quartz models designed for quick and easy replacement

PerkinElmer Pure Standards—Over 300 single and multi-element standards each with a Certificate of Analysis that documents the quality, stability and reliability



For a complete listing of ICP consumables and supplies—including information on other available torches, nebulizers, spray chambers and injectors—please contact your sales or service representative or visit www.perkinelmer.com/icpoesconsumables.

THE MOST TRUSTED NAME IN ELEMENTAL ANALYSIS

PerkinElmer has been at the forefront of atomic spectroscopy technology for over 50 years. No matter what your field, application or sample type, we have the tools and expertise to help you achieve accurate results quickly, efficiently, effortlessly.

With tens of thousands of installations worldwide, PerkinElmer systems are performing inorganic analyses every hour of every day. So turn to the most trusted name in the industry. And take advantage of a complete array of solutions engineered for unparalleled performance, accuracy and confidence.

Atomic Absorption



ICP-OES



ICP-MS



For more information on our full suite of atomic spectroscopy products and services—including a wide array of mercury analyzers and sample preparation tools—please visit www.perkinelmer.com/atomicspectroscopy.

THE NUMBER ONE NAME IN LABORATORY SERVICES

PerkinElmer's OneSource® Laboratory Services is the market leading laboratory asset management solution, pioneered more than a decade ago with more than 400,000 multi-vendor assets under its care. OneSource Laboratory Services goes beyond just maintenance and repair of instrumentation. OneSource incorporates laboratory asset management as part of our customers' business equation—a partner with proven results in improving efficiencies, optimizing operations and providing cost certainty across the globe. OneSource, the ONE you can count on.



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